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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,373	01/07/2002	Kouhei Suzuki	50195-288	5534

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EXAMINER

DOLE, TIMOTHY J

ART UNIT	PAPER NUMBER
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2858

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/036,373

Applicant(s)

SUZUKI, KOUHEI

Examiner

Timothy J. Dole

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: (2) in figs. 4 and 5. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to because $V_a(2n+1)$ should be $V_a(2n-1)$ in steps ST3, ST4 and ST7 in fig. 7. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: “and a W-phase line” should be added between “a V-phase line” and “respectively” on page 6, lines 18-19; and “3 k Ω ” should be “30 k Ω ” on page 16, line 26.

Appropriate correction is required.

5. Claim 8 is objected to because of the following informalities: Claim 8 recites the limitation “the coupling capacitor” on lines 5 and 8, for which there is no antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Tamesue et al.

Referring to claims 1, 6 and 8, Tamesue et al. discloses a ground detection apparatus for electric vehicle having a DC power supply circuit (fig. 1 (3a)) which is electrically insulated from a body of vehicle, comprising: a coupling capacitor (fig. 1 (Cd)) which is connected to the DC power supply circuit; a detection signal generator (fig. 1 (1)) outputting a ground detection signal comprising a periodical waveform (column 6, line 5), the detection signal generator being connected to one terminal of the coupling capacitor through a detection resistor (fig. 1); a signal detector (fig. 1 (v) or (v_{in})) detecting a voltage amplitude of one terminal of the coupling capacitor (column 12, lines 26-28); a converter (fig. 1 (6a)) converting the detected voltage amplitude into an insulation resistance on the basis of the relationship (column 12, lines 38-41 and 48-51) between a preset voltage amplitude and a preset insulation resistance; and a level detector

(fig. 1 (6b)) detecting levels of insulation resistance deterioration of the DC power supply circuit by comparing the converted insulation resistance with a preset ground decision threshold value (column 12, lines 43-45). It should be noted that the wire connecting the signal generator to the coupling capacitor will cause some resistance and is therefore considered to be equivalent to a detection resistor.

Referring to claim 2, Tamesue et al. discloses the apparatus as claimed wherein the signal detector performs sampling of the voltage amplitude at a predetermined period (column 9, lines 48-53).

Referring to claims 3 and 7, Tamesue et al. discloses the apparatus as claimed wherein the signal detector performs sampling of the voltage at a sampling period, which is a half the period of the periodical waveform to detect the voltage (column 9, lines 48-53); and a calculator (fig. 26 (4g)) calculates a difference between a first voltage detected by the odd-numbered sampling at the sampling period and a second voltage detected by the even-numbered sampling to acquire the voltage amplitude (fig. 26 ($|V_x|$)). It should be noted that the timing means triggers the sample/hold means when the AC current signal crosses zero, which occurs twice per period, therefore sampling is performed every half period.

Referring to claim 4, Tamesue et al. discloses the apparatus as claimed wherein the first voltage and the second voltage are converted into insulation resistances (column 12, lines 38-41 and 48-51), respectively, and the difference between the converted resistances is compared with a preset abnormality decision threshold value to detect abnormality of the periodical waveform (column 12, lines 43-45). It should be noted that

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according to MPEP § 2144.04 IV C, changes in sequence of adding materials does not render the claim patentable over the prior art unless a new or unexpected result exists.

Since Tamesue et al. and claim 4 both provide the same indication there is no new or unexpected result, the only difference is the order in which the indication is found.

Therefore, claim 4 is not patentably distinguishable over the prior art.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamesue et al. in view of Gaughan et al.

Tamesue et al. discloses the apparatus as claimed except wherein the periodical waveform is a square waveform.

Gaughan discloses a ground fault detector wherein the periodical waveform is a square waveform (abstract).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the square waveform of Gaughan et al. into the apparatus of Tamesue et al. for the purpose of more easily measuring voltage amplitudes.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to show the state of the art with respect to ground fault detection.

USPN 6,555,988 to Masaki et al.: This patent shows an apparatus for sampling and measuring currents and voltages of even and odd numbered sampling in a sampling period.

USPN 5,818,236 to Sone et al.: This patent shows an apparatus for checking insulation of ungrounded power sources in vehicles.

USPN 4,253,056 to Chaudhary: This patent shows a ground fault detector for a DC power supply.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Dole whose telephone number is 703-305-7396. The examiner can normally be reached on Mon. thru Fri. from 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on 703-308-0750. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TJD
May 19, 2003

T-J Dole


N. Le
Supervisory Patent Examiner
Technology Center 2800